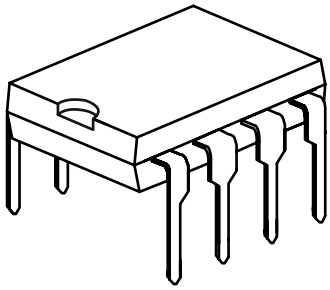
TBA820M

1.2W Audio Power Amplifier

Order code: **82-0485**

Description:

The TBA820M is a monolithic integrated audio amplifier.
It is designed for an audio frequency Class B amplifier.



DIP-8

Pb-free plating product number: TBA820ML

Features:

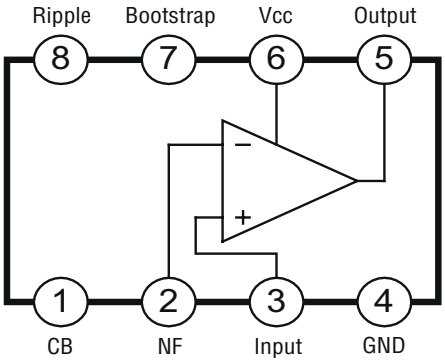
- Wide operating supply voltage: V_{CC}=3 to 14V
- Medium output power
  P_{OUT}=1.2W at V_{CC}=9V, R_L=8Ω, THD=10%
- Low quiescent circuit current: I_Q=4mA(type)
- Good ripple rejection
- Minimum number of external parts required

Absolute maximum rating (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Supply voltage	V_{CC}	16	V
Output peak current	$I_{O(peak)}$	1.5	A
Power dissipation	P_D	1.25	W
Operating temperature	Topr	0 to +70	°C
Storage temperature	Tstg	–40 to +150	°C

Notes:
1 Absolute maximum ratings are stress ratings only and functional device operation is not implied. The device could be damaged beyond Absolute maximum ratings
2 The device is guaranteed to meet performance specifications within 0°C to 70°C operating temperature range and assured by design from –20°C to 85°C

Block diagram:

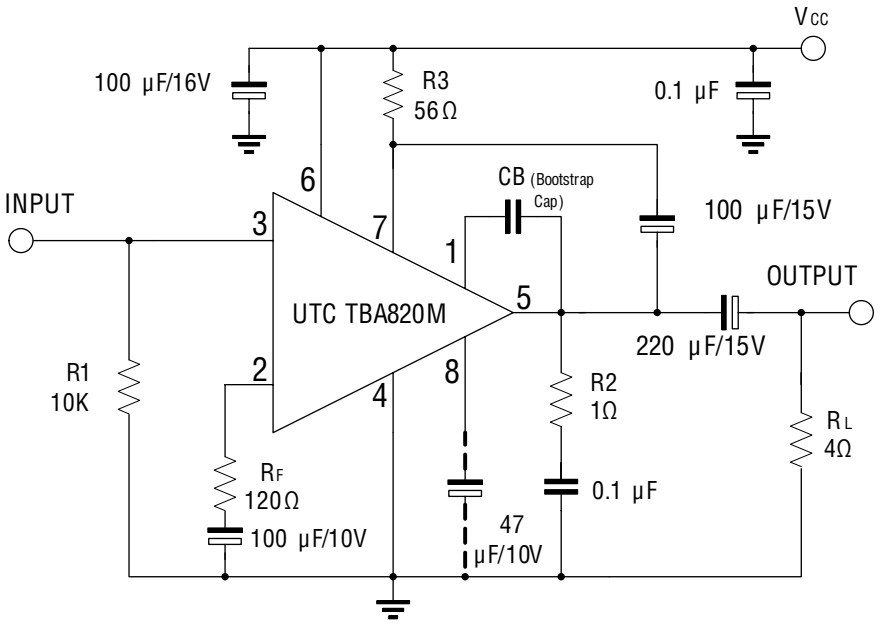


Electrical characteristics

(T_a=25°C, V_{CC}=9V, F=1KHZ, R_G=600Ω, R_F=120Ω, R_L=8Ω, unless otherwise specified)

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Quiescent current	I_Q	V_{IN}=0	–	4	12	mA
Output power	P_{OUT}	V_{CC}=9V, R_L=4Ω, THD=10%	–	1.6	–	W
		V_{CC}=9V, R_L=8Ω, THD=10%	0.9	1.2	–	
		V_{CC}=6V, R_L=4Ω, THD=10%	–	0.75	–	
		V_{CC}=6V, R_L=8Ω, THD=10%	0.4	0.5	–	
		V_{CC}=12V, R_L=8Ω, THD=10%	–	2		
Total harmonic distortion	THD	P_{OUT}=500mW	–	0.3	1	%
Open loop voltage gain	G_{VO}	R_F=0	–	75	–	dB
Closed loop voltage gain	G_{VC}	R_F=120Ω	33	36	39	dB
Input resistance	R_{IN}		–	5	–	MΩ
Output noise voltage	eN	R_G=10kΩ, BW(≠3dB)=50 to 20kHz	–	0.3	1	mV

Test circuit:



Typical characteristics

Fig 1 Quiescent circuit current vs Supply Voltage

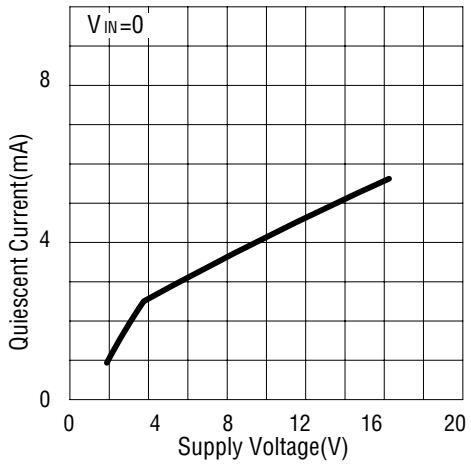


Fig 2 Output power vs Supply Voltage

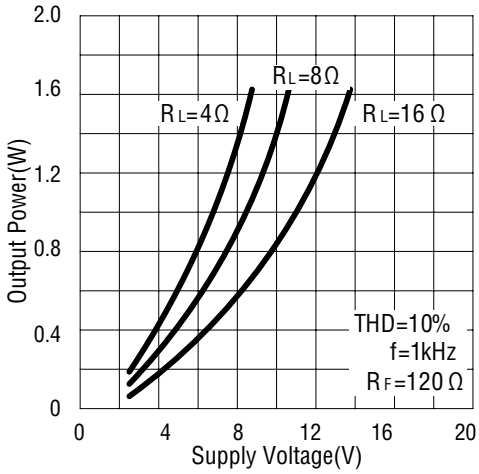


Fig 3 Total harmonic Distortion vs Output power

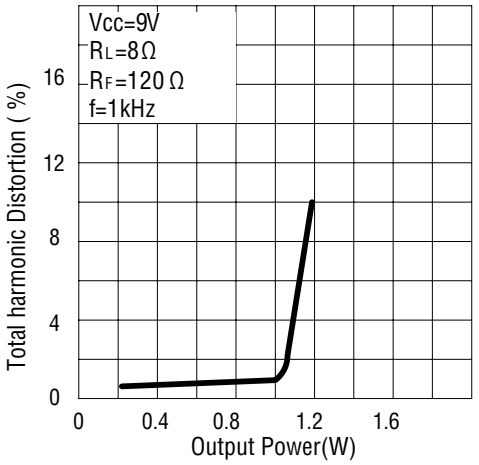


Fig 4 Voltage Gain vs Feedback resistance

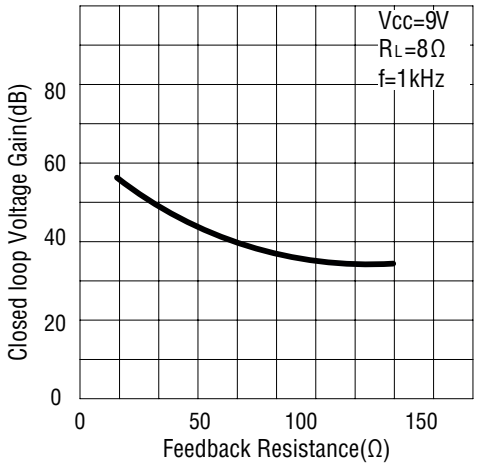


Fig 5 Power Dissipation vs Output power

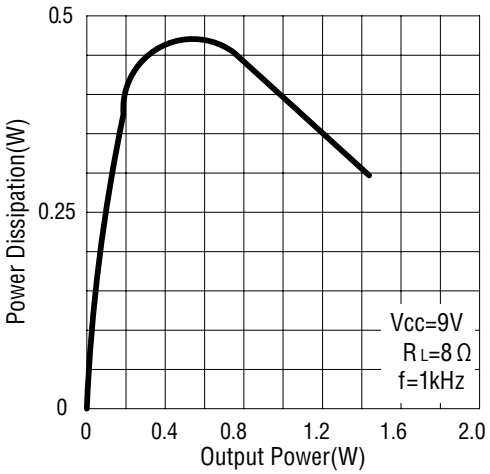
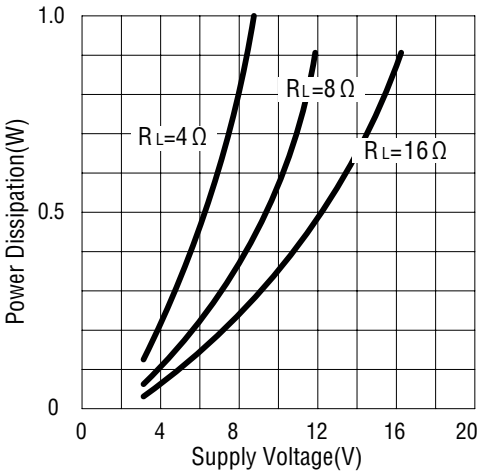


Fig 6 Power Dissipation vs Supply Voltage



Typical characteristics – continued

Fig 7 Frequency response

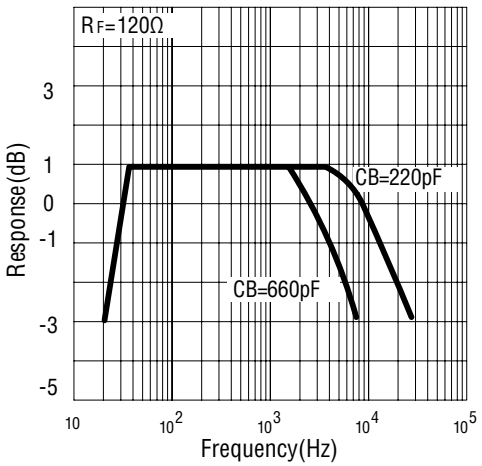


Fig 8 Total Harmonic distortion vs frequency